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Bridging or Bonding? Preferences for Redistribution and Social Capital in Russia[1]

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Does bridging or bonding social capital matter for redistribution preferences? Existing literature demonstrates causal link between measures of social capital and such preferences but does it mostly for developed countries with good enforcement of formal rules and without a distinction between two completely different types of social capital. We argue that welfare state relies on contributions from an immense number of anonymous citizens, thus attitudes towards strangers, i.e. generalized trust and solidarity should be salient. Using two surveys of about 34,000 and 37,000 Russians we prove this proposition showing the importance of the bridging type but not the bonding one. Instrumenting social capital with education, climate and distance from Moscow we deal with endogeneity concerns. Additionally we claim that connection between social capital and redistribution preferences for less developed countries such as Russia could be similar to developed countries.

Key words: preferences for redistribution; inequality; social capital; trust; corruption; Russia

*JEL-code*s: Z13, H10

1. Introduction

Social preferences for redistribution are crucial for the functioning of modern welfare state. However, there is still need to understand which factors make people willing to support the system based on taxing the rich and the middle class and transferring resources to the poor. Rational utility-maximizing voter models starting from [Meltzer, Richards 1981] imply that under universal franchise median voter's position in the overall income distribution scale dictates the tax rate and, therefore, share of income to be redistributed. In a society with large middle class popular support for redistribution would be lesser that in a highly unequal society[2]. Later research, however, has proven that this pattern is not universal, and many factors other than pure economic self-interest affect preferences for redistribution. Importantly for us, voters may oppose redistribution if they are not sure that taxes paid would not be diverted from aiding the poor [Rothstein et al. 2012; Svallfors 2012]; or if the middle class members believe that the poor are able to escape their poverty without government support if they would work hard enough [Gilens 1999; Alesina, Glaeser 2004; Alesina, La Ferrara 2005; Fong et al. 2006]. [Cavaille, Trump 2015] summarize this strand of research, talking about "the two facets of social policy preferences": taking from the rich and giving to the poor, which are independently determined.

Social (generalized) trust allows to solve the problems arising from individuals' limited ability to monitor each other action. The basic idea underlying this hypothesis is that welfare

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[2] In practice, however, it is necessary to account for the fact that existing income distribution itself is at least partially product of government redistribution and public goods provision, thus it is not trivial to establish a causal link in this setting.

system is a kind of public good depending crucially on collective action and the society's ability to solve free-rider problem successfully. The free-rider problem in this particular setting refers to benefiting from the welfare state without contributing to its resources by avoiding taxes, working informally while being on welfare, claiming benefits without being legally entitled or otherwise abusing the social security system. Thus people would be more likely to support taxation in exchange for access to generous redistribution schemes in a case of need if they are confident in their peers [Daniele, Geys 2015].

In this paper, we test this hypothesis using individual- and regional-level data on social capital and preferences for redistribution in Russia. Previously, this relationship was studied mostly using data from democratic countries with well-functioning government bureaucracy, like OECD member states. Focusing on Russia has certain advantages that constitute an important part of the paper's novelty. Russia has relatively weak tax enforcement, and unconditional compliance with tax rates cannot be taken for granted. Also, citizens' capacity to influence government budget allotment and to monitor public spending is limited due to weakness of accountability mechanisms. Social trust is particularly salient as a predictor of human behavior when formal enforcement of rules is inefficient [Fisman, Miguel 2007; Cassar et al. 2014]. Therefore, we should expect that social trust should lead to higher preferences for redistribution among Russian respondents.

We use data from 2007 and 2008 rounds of Georating survey provided by the large and well-known public opinion fund FOM[3]. It's the best available source of information on Russians' views and preferences, which is representative at the regional level. One important pitfall is a lack of questions about trust and other measures of social capital in 2008 and those about preferences for redistribution in 2007. We overcome this problem averaging individual responses about social capital at the regional level in 2007 and using the resulting vector of regional means as an explanatory variable in regressions with 2008 preferences for redistribution as a dependent variable[4].

We demonstrate that respondents in regions with high level of generalized trust tend to rate a society with low income inequality as being more fair compared to a society whose members' income varies greatly according to individual ability and skills[5]. This result is robust to using different estimation techniques, controlling for a number of individual- and regional-level socio-demographic, economic and institutional controls. Also, we get pretty similar results using perceptions of social solidarity instead of social trust. To deal with causality concerns, we instrument social trust and perceptions of solidarity in a region with its January and June temperature, distance from regional capital to Moscow and 1989 share of people with college-level degree. The main results become even stronger in the IV setting.

In addition, we consider effect of socio-demographic variables used as the controls on individual tolerance of inequality (alternatively, on preferences for redistribution). According to our expectations, individual income as well as being an entrepreneur increase tolerance of inequality, while salaried employees, retirees and unemployed consistently tend to be pro-redistribution. Having secondary vocational or college-level degree is positively correlated with tolerance of inequality. Regional-level variables, including GRP, social spending per capita and ethnolinguistic fractionalization index are statistically insignificant, but corruption perception has strong negative association with tolerance of inequality. Surprisingly, regional-level Gini

[3] http://fom.ru/

[4] To be more precise we get aggregated social capital measures that are purified from individual parameters such as age, gender, etc. Details of the procedure explained in section 4.

[5] We are grateful to Daniel Treisman for the notion that this question may be also interpreted as a measure of tolerance of inequality. Advantage of using this question is that it does not refer to actual level of redistribution, which may differ across regions and thus bias our results.

index tends to be positively correlated with tolerance of inequality, which may reflect some kind of status quo bias in the respondents' answers.

Our results point at bridging social capital as a source of higher preferences for redistribution. Also, we obtain no significant results substituting trust and perceptions of solidarity with measures of bonding social capital, which is likely to provide non-governmental social safety net with the resources of close circle of friends, relatives, ethnic or religious kin. Thus we contribute to the theory pointing at significance of bridging type of social capital, not bonding one.

The paper is organized as follows. The next section discusses the literature on preferences for redistribution and specifies our contribution. The third section gives important information on inequality and redistribution policy in Russia. Than the three following sections constitute empirical part of the paper describing data and empirical strategy and presenting main empirical findings with the robustness checks. The last section concludes.

2. Preferences for redistribution: Theory

Theoretical literature on preferences for redistribution has been largely built on the seminal Meltzer-Richards model of positive relationship between income inequality and median voter support for redistributive policies. However, as noted in [Alesina, Guiliano 2009; Olivera 2015], this hypothesis received mixed empirical support. Therefore, much theoretical and empirical effort has been devoted to discovering additional mechanisms that may drive relationship in another direction than predicted by the Meltzer-Richards model.

Expectations of *upward mobility* are among most common explanations for people's preferences for redistribution other than median voter's position in the income distribution [Piketty 1995; Benabou, Ok 2001; Alesina, La Ferrara 2005]. If people in lower income strata are optimistic about their future incomes, they would be less willing to support redistribution than predicted by their current income. Conversely, experiencing negative economic shocks during childhood make individuals more pro-redistribution, as shown in [Giuliano, Spilimbergo 2008]. [Gimpelson, Monusova 2014] use a cross-country dataset to demonstrate that *perceived* opportunities for upward social mobility are more important as a determinant of peoples' tolerance of inequality than *actual* size of the gap between the rich and the poor. Furthermore, [Gimpelson, Treisman 2015] demonstrate that respondents in social surveys lack idea of *actual* level of inequality in their countries reported by the official statistics, but *perceived* level of inequality is strong and statistically significant predictor for popular support for redistribution at the national level.

Individual *risk-aversion* is also among the classic factors generally accepted to influence people's taste for redistribution. More risk-averse individuals could show more pro-redistributive preferences [Sinn 1995] as they need social insurance from the welfare state.

Social *beliefs about causes of wealth and poverty* also matter: people are less willing to put high tax burden on wealth accumulated due to individual effort than on windfall created by birth, connections, luck or corruption [Alesina, Angletos, 2005]. [Gimpelson, Monusova 2014] find that wide-spread perceptions of non-meritocratic mechanisms like family ties and corruption as crucial drivers of success are positively related to preferences for redistribution. [Sabatini et al. 2014] show that individual stigmatization of rent-seeking is positively related to preferences for redistribution. Also they find that living in an area with lower share of people stigmatizing rent-seeking (and thus such behavior being more common) makes people favorable to redistribution (however, the latter relationship holds for men only). Similarly, redistribution tends to be higher in the societies where people think that poor are unlucky than in those where people believe that poor are lazy and immoral [Gilens 1999; Alesina, Glaeser 2004; Alesina, La Ferrara 2005]. [Fong et al. 2006] note that fairness and reciprocity considerations are important

as foundation of the welfare state, but they also may induce opposition to redistribution because of perceived "un-deservingness" of the poor and tendency to support increased screening of those who apply for social benefits from the state. [Benabou, Tirole 2006] further develop this logic, arguing that parents may inculcate in their children beliefs intentionally exaggerating the role of effort in success (just world beliefs) to keep the children motivated.

Furthermore, *ideological indoctrination* has been empirically shown to be able to transform popular demand for welfare state. [Alesina, Giuliano 2009] point at the robust individual-level connection between preferences for redistribution and self-identified political ideology: left-wing individuals show greater taste for redistribution in comparison with right-wing ones. As shown in [Alesina, Fuchs-Schundeln 2007] and [Pop-Eleches, Tucker 2014], people who were exposed in their past to communist socialization are more likely to think that the state is responsible for individual welfare even when controlled for a number of socio-demographic variables, including income level. Several papers also show importance of religion: more religious people tend to support redistribution less than atheists. For example, [Scheve, Stasavage 2006] argue that both religion and welfare state serve as social insurance for adverse life events and find empirical support for the substitution mechanism between the two.

[Marques 2015] offers additional perspective, arguing that under poor institutions individuals with comparative advantage in hiding their income from the government, like self-employed professionals and service workers, are more likely to support redistribution since they are eligible to claim benefits while being able to evade taxes.

Some papers also point at the importance of other individual characteristics. Young and old people, women, blacks may prefer more redistribution, while those with higher income and better educated are less concerned about it [Alesina, Guiliano 2009]. This evidence is hard to explain by only pure economic motives such as the logic in [Meltzer, Richards 1981] and by prospects of upward mobility. Pro-redistributive preferences of women are consistent with personality features documented by psychologists, and the effect of education could be reversed by left-wing indoctrination.

Recently, researchers have started to focus on *social capital* as resource enabling the society members to favor redistributive policies. [Bergh, Bjornskov 2011] and [Bjornskov, Svendsen 2013] examine relationship between social trust and *actual* size of redistribution. They use instrumental variables to conclude that causality runs in the direction from trust to redistributive policies, not vice versa, as argued in [Kumlin, Rothstein 2005][6]. [Algan et al. 2016] predict twin peaks relationship between trust and the size and the welfare state due to heterogeneous preferences and behavior of high-trust (civic) and low-trust (uncivic) individuals. They corroborate predictions from their formal model with the evidence from the OECD countries. [Yamamura 2012], using Japanese survey data, demonstrates that "people are more likely to express preferences for income redistribution in areas with higher rates of community participation". [Danielle, Geys 2015] on the sample of the OECD countries show that individual support to welfare state is influenced by the "citizen's trust in their fellow citizens".

However, as it has been noted above, these studies build on evidence from democratic countries with good institutions. This paper aims to address dearth of research on the issue outside the developed countries context and to check how social capital in general and social trust in particular can bridge the gap in formal enforcement and buttress public support for the welfare state. We also aim to show that bridging type of social capital and not the bonding one matters for redistribution preferences. Welfare states are based on people most of which don't know each other personally. Thus the bridging type reflecting attitudes towards strangers should be salient in this particular setting.

[6] [Kumlin, Rothstein 2005] argue that egalitarian social structure and universalistic welfare state institutions like in the Nordic countries matter for the production of social capital.

3. Inequality and redistribution policy in Russia

Understanding institutional context within which redistribution system in a given society operates is an important part of explaining popular preferences for redistribution. A generous welfare state is more likely to raise concerns of free-riding, while neglecting of poverty and inequality issues by the government may lead to higher support for redistribution.

During the post-socialist transition, income inequality in Russia has become tremendous. Russia's Gini index was 41.7 in 2011[7]. The income gap in Russia is wider than in most other European countries, including post-socialist nations of Central and Eastern Europe. In contrast to many developed countries, in Russia there are also wide income disparities between regions [Zubarevich, Safronov 2011].

At the same time, funding of the Russian welfare system is scarce and insufficient to cope with issues of inequality. The Independent Social Policy Institute estimates the share of social expenditure of GDP (including health) in 2008 as 12.7 per cent only. Social spending was expanded as a share of GDP after the 2008-2009 recession and attained 16.8 per cent in 2013 [Zubarevich, Gorina 2015: fig. 5]. This level is still significantly lower than OECD average (21.7 per cent in 2013), although it is higher or comparable to several high- and middle-income OECD countries, including Chile, Estonia, Israel, Republic of Korea, Mexico, and Turkey[8].

In addition to inadequate funding, the Russian social welfare system has difficulties in targeting resources towards those who are actually in need. According to [Ovcharova, Popova 2001], the Soviet welfare system had two main objectives: to reward meritorious citizens (such as WWII veterans or Chernobyl nuclear disaster responders) and to provide basic social insurance like pensions and free healthcare. In the 1990s, this merit-oriented bias of social welfare was deepened when the Communist-oriented Duma alongside with regional governments introduced dozens of in-kind privileges based on relatively simple, easily-monitored formal criteria such as being veteran, retiree, disabled person or having many children. In 2005, these in-kind privileges were largely replaced with lump sum transfers; however, this brought no changes to the overall redistribution pattern. When it comes to increasing welfare spending, the government typically chooses to raise pensions. Means-tested transfers to the poor accounted for 15-17 percent of social policy spending (excl. health expenditures) in late 2000s-early 2010s [Gorina, mimeo].

Social welfare responsibilities in Russia are shared between the Federation and the regional governments, which receive earmarked federal transfers and are also free to contribute their own funds to welfare spending. Federal-level social protection is uniform across regions although some policies may treat some regions as the northern ones and provide additional bonuses to them. Regional-level welfare policies vary across regions. As a result there is a significant variation among regions in per capita social spending. In 2011, the minimum was 947 rubles in Nenetskiy Autonomous Okrug and the maximum was 233,000 rubles in Moscow City.

To conclude, Russia has relatively modest social spending as percentage of GDP while income disparities across social strata as well as between regions are stark. Social spending is not targeted to the poor; therefore, the problem of free-riding by welfare recipients is not expected to be pressing. However, concerns about fairness of income distribution are likely to influence popular preferences for redistribution to a significant degree.

The above analysis also brings us to conclusions about variables that should be accounted for in our model. Now theoretical considerations about the role of inequality for redistribution

[7] https://www.cia.gov/library/publications/the-world-factbook/geos/rs.html
[8] http://stats.oecd.org/Index.aspx?DataSetCode=SOCX_AGG

preferences are supported by the empirical evidence. We also see importance of social expenditures as their regional variation could influence popular preferences for redistribution. Overall we should control for both inequality and social spending although don't expect them to kill the effect of social capital.

4. Data and empirical strategy

We investigate the link between social capital and preferences for redistribution employing two surveys of about 34,000 and 37,000 individuals in each conducted in Russia by the well-known public opinion fund FOM in 2007 and early 2008. Both surveys are designed to be representative at regional level and cover the same 68 Russian regions with similar number of observations across regions. It's the best available source of information on the views, norms and attitudes of Russians that covers the vast majority of Russian regions. However the limitation of these surveys is that there are no questions about social capital in 2008 and about preferences for redistribution in 2007. We overcome it by obtaining aggregated for the Russian regions social capital variables and using them with the individual-level preferences for redistribution. Summary statistics of the variables presented in Tables A2 and A3 of the Appendix.

Our dependent variable about preferences for redistribution is based on the responses to the question from 2008 survey: "In your opinion, what type of society is more fair: where people's incomes are similar or where incomes are appreciably different?" with a scale from 1 to 4 where higher values correspond to preferences for more unequal society. These response options and the distribution of answers presented in Table 1. We transform four-point categorical variable to a binary one indicating those who gave preference to society with appreciably different incomes rather than society with similar incomes (see Table 1). That *Tolerance_inequality* dummy is our main dependent variable, however we try original four-point variable as well to test the robustness of our findings.

Table 1

In your opinion, what type of society is more fair: where people's incomes are similar or where incomes are appreciably different?

Response options	Response rate	Dependent variable: *Tolerance_inequality*
1. Certainly the society where incomes are similar	16.7%	0
2. Rather the society where incomes are similar	28.2%	
3. Rather the society where incomes are appreciably different	24.8%	1
4. Certainly the society where incomes are appreciably different	14.1%	
5. Don't know	16.2%	Missing

Four measures of regional social capital obtained from 2007 survey are used as our independent variables of interest. We start with a generalised trust which in our particular setting characterizes perceptions of free-riding that abuses social security system. The corresponding question in 2007 survey has a traditional wording, used, for example, in World Values Survey: "Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?". The two response options "Most people can be trusted" and "Need to be very careful" were coded as 1 and 0 respectively. It's noteworthy that generalized

trust serves as a proxy for bridging social capital which we expect to be salient for preferences for redistribution.

Another bridging social capital measure is solidarity which is quite similar to generalized trust when we talk about attitudes to social security system abuse. Finally, we use two measures of bonding social capital, namely particularized trust and helpfulness, to check whether our predictions about importance of bridging social capital are true. Details for the measures of social capital could be found in Table 2 below and Table A3 of the Appendix.

Table 2

Social capital measures

Variable	Question wording	Response options
Generalized trust	Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?	1. Most people can be trusted 2. Need to be very careful 3. Don't know
Solidarity	Do you think that there is more solidarity and cohesion among people in our country today, or that there is more disagreement and disunion?	1. Certainly more solidarity and cohesion 2. Somewhat more solidarity and cohesion 3. Somewhat more disagreement and disunion 4. Certainly more disagreement and disunion 5. Don't know
Particularized trust	Do you trust people who have much to do with you more than other people, or you trust them less or equally with others?	1. Certainly more 2. Somewhat more 3. Equally 4. Somewhat less 5. Certainly less 6. Don't know
Helpfulness	How often do you see readiness to help each other among people around you?	1. Very often 2. Quite often 3. Quite seldom 4. Very seldom 5. Never 6. Don't know

We run the following baseline OLS-model:

$$Tolerance\_inequality_{ij} = \alpha + \beta SocialCapital_j + \gamma IndividualControls_i + \delta RegionalControls_j + \varepsilon_{ij} \quad (1)$$

where $Tolerance\_inequality$ is a dummy indicating preferences of a respondent i from region j, $SocialCapital_j$ represents estimation of one of four social capital characteristics for region j. The term $IndividualControls_{ij}$ includes individual control variables that according to the literature could influence preferences for redistribution and that were available from 2008 survey: gender, age, age squared, income, education, occupation and settlement status. $RegionalControls_j$ denotes a set of regional control variables derived from the theory and

Russian evidence and obtained from official statistics and agencies which provide institutional quality indicators for Russian regions (INDEM foundation and Moscow Carnegie Center). Thus we control for wealth (*logarithm of GRP per capita*), inequality (*Gini coefficient* or *share of people with incomes below subsistence level* instead), fractionalization (*ethnic fractionalization index*), existing level of social support in a region (*logarithm of government social expenditures*), and institutional quality (*corruption index*). Description of regional controls presented in Table A1, while summary statistics provided in Table A3, both in the Appendix.

$SocialCapital_j$ is for the other year than $Tolerance\_inequality$ and thus we can't include individual-level control variables for social capital in the baseline regression[9]. To avoid noisy assessments of social capital we run a set of the following OLS-regressions on the 2007 dataset:

$$Social\ capital = \alpha Gender + \beta Age + \gamma Age^2 + \delta Education + \phi Income + \eta Nationality + \lambda Citytype + \mu Reg\_Dummies + \varepsilon \quad (2)$$

The dependent variable $Social\ capital$ is substituted by one of four characteristics of social capital: generalised trust, solidarity, particularized trust or helpfulness. A set of regional fixed effects $Reg\_Dummies$ captures cross-regional differences in social capital purified from personal characteristics of respondents[10]. We use them further in our base model (1) as proxies for regional social capital. We also utilize simple regional means of social capital to illustrate the robustness of our findings.

5. Results

Generalized trust matters both statistically and economically suggesting that people living in regions with higher levels of generalized trust have lower tolerance of inequality (Table 3). The results are robust for the set of individual and regional control variables, alternative four-point scale measure of tolerance of inequality, and for simple regional means of trust measures. The magnitude of trust effect is almost twice as large as the effect of gender, comparable to the effect of Gini coefficient and just a little smaller than the effect of unemployment and high income. This provides us with a link to previous research by [Algan et al. 2016], where there is a positive and economically significant influence of trust on preferences for redistribution.

Table 3

Tolerance of inequality and social capital: OLS

	(1)	**(2)**	**(3)**	**(4)**
Bridging social capital				
Generalized trust	-0.696***			
	[0.197]			
Solidarity		-0.557***		
		[0.192]		
Bonding social capital				
Particularized trust			-0.008	
			[0.111]	
Helpfulness				0.161
				[0.191]
Gender: female	-0.040***	-0.040***	-0.040***	-0.040***
	[0.007]	[0.007]	[0.007]	[0.007]
Age	0.030**	0.032***	0.031**	0.031**
	[0.012]	[0.012]	[0.012]	[0.012]

[9] See [Alesina, La Ferrara 2002] for the influence of individual parameters such as income or education on social capital.

[10] Overall strategy of getting pure trust is similar to that used by [Algan, Cahuc 2010].

Age squared	-0.0061*** [0.0013]	-0.0062*** [0.0014]	-0.0062*** [0.0013]	-0.0062*** [0.0013]
Education: primary professional	0.031* [0.018]	0.030 [0.018]	0.027 [0.018]	0.027 [0.018]
Education: secondary general	0.021 [0.013]	0.022 [0.013]	0.019 [0.013]	0.019 [0.013]
Education: secondary professional	0.063*** [0.014]	0.062*** [0.014]	0.061*** [0.014]	0.061*** [0.014]
Education: uncompleted higher, higher / PhD	0.116*** [0.016]	0.115*** [0.016]	0.115*** [0.016]	0.115*** [0.016]
Type of employment: department manager	-0.037* [0.020]	-0.038* [0.020]	-0.036* [0.020]	-0.036* [0.020]
Type of employment: specialist, master	-0.075*** [0.016]	-0.077*** [0.016]	-0.077*** [0.016]	-0.078*** [0.016]
Type of employment: white collar worker	-0.104*** [0.018]	-0.106*** [0.018]	-0.109*** [0.018]	-0.111*** [0.018]
Type of employment: blue collar worker	-0.092*** [0.017]	-0.093*** [0.017]	-0.089*** [0.0167]	-0.090*** [0.0166]
Type of employment: (not working) retired	-0.101*** [0.018]	-0.100*** [0.018]	-0.098*** [0.019]	-0.099*** [0.019]
Type of employment: housewife (do not work and do not plan to look for job)	-0.083*** [0.023]	-0.083*** [0.023]	-0.079*** [0.023]	-0.079*** [0.023]
Type of employment: unemployed or on holidays without pay	-0.102*** [0.021]	-0.101*** [0.021]	-0.098*** [0.022]	-0.099*** [0.022]
Type of employment: student	-0.086*** [0.020]	-0.087*** [0.020]	-0.085*** [0.021]	-0.085*** [0.021]
Type of employment: other	-0.130*** [0.035]	-0.132*** [0.035]	-0.133*** [0.035]	-0.134*** [0.035]
Income category: having enough money for food, but not enough for clothes, shoes	0.042*** [0.013]	0.045*** [0.014]	0.043*** [0.014]	0.043*** [0.014]
Income category: having enough money for clothes and shoes, but not enough for home appliances	0.084*** [0.016]	0.087*** [0.016]	0.083*** [0.017]	0.083*** [0.017]
Income category: having enough money for home appliances, but not enough for a car	0.158*** [0.020]	0.160*** [0.020]	0.155*** [0.021]	0.154*** [0.021]
Income category: having enough money for a car or for an apartment, house	0.181*** [0.019]	0.184*** [0.019]	0.180*** [0.020]	0.179*** [0.020]
Settlement: Moscow	0.087 [0.057]	0.067 [0.061]	0.099 [0.066]	0.092 [0.061]
Settlement: Saint Petersburg	0.010 [0.034]	0.013 [0.036]	-0.004 [0.038]	-0.025 [0.043]
Settlement: regional capital (population<= 1 mln)	0.043 [0.041]	0.034 [0.0417]	0.0293 [0.0422]	0.0266 [0.0413]
Settlement: provincial town	0.037 [0.041]	0.028 [0.041]	0.027 [0.041]	0.024 [0.040]
Settlement: village	-0.011	-0.020	-0.020	-0.022

	[0.040]	[0.041]	[0.041]	[0.040]
Ethno-linguistic fractionalization	0.040	0.086	0.049	0.028
	[0.077]	[0.077]	[0.080]	[0.086]
Corruption	-0.042***	-0.039***	-0.051***	-0.050***
	[0.014]	[0.014]	[0.015]	[0.015]
Log GRP per capita	-0.111	-0.090	-0.138	-0.16
	[0.077]	[0.084]	[0.088]	[0.094]
Log Social spending per capita	-0.0005	0.002	0.027	0.035
	[0.058]	[0.054]	[0.059]	[0.059]
Gini	0.992**	0.876*	0.917*	0.914*
	[0.428]	[0.470]	[0.504]	[0.502]
Constant	0.398*	0.464*	0.302	0.252
	[0.221]	[0.236]	[0.274]	[0.232]
Observations	31,068	31,068	31,068	31,068
R-squared	0.069	0.068	0.064	0.065

Notes: Robust standard errors in brackets; *** p<0.01, ** p<0.05, * p<0.1.
Base categories:
Education: primary general or less;
Type of employment: businessmen, entrepreneur, farmer, top manager;
Income category: having not enough money even for food;
Settlement: regional capital (population> 1 mln).

Solidarity, i.e. feeling of unity among people that are connected to expectations of low levels of abuse of the social system, further strengthens our results. It also demonstrates negative sign of the connection with tolerance of inequality, thus serving as a good robust check for our theoretical predictions with another measure for bridging social capital.

Finally, we use measures of bonding social capital as a placebo test. According to our theory individual attitudes towards strangers, i.e. generalized trust and solidarity should influence the preferences for redistribution. At the same time, we do not expect to find the same effect for one's close circle because the welfare state relies on contributions from an immense number of anonymous citizens which by default do not know individual benefit claimants. We successfully find that our two measures of bonding social capital, namely particularized trust and helpfulness, are not related to tolerance of inequality.

In addition we see that more redistribution is preferred by younger and older persons, unemployed, females, people with lower levels of education and income. All this is in line with previous findings. Notably, entrepreneurs have less desire to redistribute which talks to the literature on risk-aversion and role of personal effort vs. sudden luck. We also see that those living in regions with higher inequality prefer less redistribution which can be seen as yet another example of the failure of the Meltzer-Richards model to explain redistribution preferences.

What is remarkable is that more corrupt regions are positively associated with preferences to redistribute. Moreover, result is robust to several alternative measures of corruption[11] (see Table 4). As shown in [Aghion et al. 2010], even if people think that government is corrupt they could be more supporting government intervention into economy because of their lack of trust in business. The same possibility of a positive link between corruption and preferences for redistribution is demonstrated by the theoretical model in [Alesina, Angeletos 2005]. Redistribution thus perceived as an equalizer of outcomes created by

[11] Although both *Corruption index* and *Willingness to bribe* assess regional corruption in 2010 we believe they may be used as measures of corruption for 2008, because this institution is unlikely to evolve rapidly. Nevertheless, in our main specification we give preferences to corruption assessment provided in 2004.

unfairness. Alternatively, prevalence of uncivic individuals interested in free-riding could have such an outcome [Algan et al. 2016].

Table 4

Corruption and preferences for redistribution

	(1)	(2)	(3)
Corruption	-0.042***		
	[0.014]		
Corruption index (by INDEM)		-0.162**	
		[0.069]	
Willingness to bribe (by INDEM)			-0.342***
			[0.119]
Generalized trust	-0.777***	-0.696***	-0.808***
	[0.185]	[0.197]	[0.196]
Individual controls	YES	YES	YES
Regional controls	YES	YES	YES
Constant	0.398*	0.410*	0.400*
	[0.221]	[0.214]	[0.206]
Observations	31,068	31,068	31,068
R-squared	0.069	0.068	0.069

Notes: Robust standard errors in brackets; *** p<0.01, ** p<0.05, * p<0.1.

6. Endogeneity concerns

Endogeneity of the main explanatory variable is a potential challenge to our identification strategy. If social trust is somehow influenced by tolerance of inequality (reverse causality), or co-determined with it by any third factor (omitted variable), the OLS estimates are inconsistent. We can also expect errors in the measurement of social capital and preferences for redistribution which lead to the same inconsistency. Reverse causality is possibly the least of the problems as regional levels of social capital reflect the overall atmosphere and not individual feelings. Anyway to deal with potentially biased OLS-estimates cautiously, we implement 2SLS approach.

We instrument social capital in the regions with four instrumental variables. Following [Bergh, Bjornskov 2011], we use average temperature in January and July. Traditional argument is that in colder climates individual survival historically depended more on cooperation with strangers, thus predicting negative first-stage relationship. At the same time, in Russia with its tradition of communal agriculture this channel of influence seems to be less relevant. Moreover, in southern and warmer areas of Russia communal agriculture was even more important for survival than in northern and colder ones due to lack of other valuable resources that can be extracted by smaller groups of people, like wood or fur skins. These resources are also contestable and lootable, thus making profitable for an individual to be tough and suspicious to strangers (in a manner similar to “culture of honor” formation in lawless herder societies, as tested empirically in [Grosjean 2014]). Therefore, we can expect either negative or positive sign of the first-stage relationship.

As additional two instruments we use share of inhabitants having college-level degrees in 1989 and distance to Moscow. 1989 share of college graduates is a proxy for historic social capital, since it has been shown that social capital is important enabler of human capital formation (Coleman, 1988). We expect it to be positively related to social capital. Distance to Moscow is a proxy for state capacity and intensity of state control [Foa, Nemirovskaya 2016]. Given centralized and, for the most of Russian history, authoritarian nature of the state, it is more likely that heavy government involvement in life is likely to crowd out social capital, as outlined

in [Putnam et al. 1993]. We expect positive relationship between distance and social capital measures. Description and summary statistics for the instruments presented in Tables A1 and A3 of the Appendix.

The results from the first-stage regressions (Table 5) are generally in line with our expectations. January average temperature is positively related to solidarity, thus favoring the second of possible explanations. 1989 share of college graduates and logarithm of distance to Moscow are also positively related to trust. Interestingly, our instrumental variables do not predict indicators of bonding social capital, i.e. particularized trust and expectations of aid from one's close circle.

Table 5

IV first step

	(1)	**(2)**	**(3)**	**(4)**
	Generalized trust	Solidarity	Particularized trust	Helpfulness
Temperature in January	0.002	0.003**	-0.002	-0.0005
	[0.001]	[0.001]	[0.003]	[0.0012]
Temperature in July	-0.004	-0.008*	-0.001	-0.004
	[0.003]	[0.004]	[0.005]	[0.004]
Higher education	0.011***	0.008**	-0.005	0.009**
	[0.003]	[0.003]	[0.005]	[0.004]
Log distance to Moscow	0.036***	0.051***	-0.028	-0.005
	[0.013]	[0.012]	[0.022]	[0.009]
Individual controls	YES	YES	YES	YES
Regional controls	YES	YES	YES	YES
Constant	0.126	0.321***	0.930***	0.311***
	[0.090]	[0.095]	[0.190]	[0.106]
Observations	31,068	31,068	31,068	31,068
R-squared	0.377	0.458	0.107	0.422

Notes: Robust standard errors in brackets; *** p<0.01, ** p<0.05, * p<0.1.

Overall IV regressions provide even stronger results than OLS (Table 6). Coefficients for generalized trust and solidarity are 1.5 times larger than obtained with the OLS-model. Thus we can claim even more economically significant effect of bridging social capital on preferences for redistribution. One can also note that helpfulness becomes significant with the same direction of effect as bridging social capital measures. But recall the above mentioned first-stage results that demonstrate weak ability of the instruments to predict bonding social capital measures. Thus we can't interpret this result properly.

Table 6

Tolerance of inequality and social capital: IV

	(1)	**(2)**	**(3)**	**(4)**
Bridging social capital				
Generalized trust	-1.013***			
	[0.379]			
Solidarity		-0.883***		
		[0.329]		
Bonding social capital				
Particularized trust			1.334	
			[1.276]	
Helpfulness				-1.071*

				[0.612]
Individual controls	YES	YES	YES	YES
Regional controls	YES	YES	YES	YES
Constant	0.444**	0.563**	-0.860	0.585*
	[0.226]	[0.248]	[1.043]	[0.334]
Observations	31,068	31,068	31,068	31,068
R-squared	0.068	0.067	0.029	0.049

Notes: Robust standard errors in brackets; *** p<0.01, ** p<0.05, * p<0.1.
Controls for individuals' background and characteristics of regions are the same as in Table 2.

7. Conclusion

Preferences for redistribution are driven by a large set of factors representing individual characteristics, experience and region or country of residence. Social capital is among the factors that were recognized only recently. Its ability to solve free-riding problems was demonstrated in a number of papers. However, evidence remains mostly for developed countries with good institutions. Moreover there is no distinction between two completely different types of social capital – bridging and bonding ones. First of them reflects attitudes to unknown people, while second serves to capture perceptions about quite narrow circle of people who the respondent knows. We expect that given the nature of a welfare state only bridging social capital should be prominent.

Using unique surveys of about 35,000 individuals in the vast majority of Russian regions we study the effect of bridging and bonding social capital for the preferences for redistribution. In doing so we measure preferences for redistribution with the attitudes to the fairness of inequality. An important advantage of this question is that it doesn't refer to actual level of redistribution that may differ across regions and thus bias results. We find that individuals living in regions with higher generalized trust and solidarity tend to rate unequal society as unfair. On the contrary we don't find the same effect for particularized trust and helpfulness which are employed as measures of bonding social capital. Results are robust to different controls and measurement techniques and become even stronger in IV-model with the instruments for education, climate, and distance from Moscow.

We also find that some individual parameters such as age, gender, education, income, unemployment, being an entrepreneur matter for redistribution preferences. This is in line with previous research that was however mostly for developed countries. Thus interregional variation of preferences for redistributive policy in developing country could have the same determinants as in developed countries.

What is even more interesting that according to our findings and consistent with theoretical predictions from the literature, corruption leads to more demand for redistribution, possibly because redistribution is believed to correct unfairness created by potentials for free-riding in corrupt environment. For our particular setting this means that preferences for redistribution would be the highest in regions with high social capital and widespread corruption. How this could be the case? Perhaps because of the vicious circle created by the influence of social capital on redistribution which in turn leads to more corruption and then to more redistribution. This puzzle should be accounted for in the reform agenda and provides an interesting topic for future research.

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Appendix

Table A1. Regional control variables: description and sources

Variable name	Year	Variable description	Data source
Ethno-linguistic fractionalization	2010	Herfindahl—Hirschman index based on ethnic groups' shares to measure ethnic diversity within regions. Higher values of variable indicate more fractionalization.	2010 Russian census
Log GRP per capita	2007	Logarithm of gross regional product per capita, adjusted for regional cost of living with regional average price for fixed commodity bundle, number of commodity bundles per year.	Rosstat database
Log social spending per capita	2007	Logarithm of regional and local authorities' spending per capita on social welfare, adjusted for regional cost of living with regional average price for fixed commodity bundle, number of commodity bundles per year.	Russian Treasury database
Gini	2007	Gini coefficient indicating income inequality within regions.	Rosstat database
Poverty	2007	Percentage of people with level of income below subsistence level.	Rosstat database
Corruption	2004	Experts' assessments based corruption index; it's a component of regional democracy index provided by Moscow Carnegie Center. Higher values of variable indicate more corruption.	Moscow Carnegie Center
Corruption index (by INDEM)	2010	Survey based regional corruption index provided by INDEM foundation and Public Opinion Fund. Higher values of variable indicate more corruption.	INDEM foundation report to Ministry of Economic Development of Russia
Willingness to bribe (by INDEM)	2010	Survey based assessment of people's willingness to offer bribes; it's a component of regional corruption index provided by INDEM foundation and Public Opinion Fund. Higher values of variable indicate more corruption.	INDEM foundation report to Ministry of Economic Development of Russia
Log distance to Moscow		Logarithm of distance from Moscow to regional capitals.	Rosstat database
Temperature in January	2007	Average temperature in January (°C).	Rosstat database

Variable name	Year	Variable description	Data source
Temperature in July	2007	Average temperature in July (°C).	Rosstat database
Higher education	1989	Percentage of population aged 15 and above with higher education.	1989 Soviet census

Table A2. Summary statistics for variables at the individual level

Variable	Obs	Mean	Std. dev.	Min	Max
Tolerance of inequality	31209	0.46	0.50	0	1
Gender: female	37263	0.54	0.50	0	1
Age	37263	44.2	16.8	18	95
Education: primary general or less	37217	0.11	0.31	0	1
Education: primary professional	37217	0.07	0.26	0	1
Education: secondary general	37217	0.23	0.42	0	1
Education: secondary special	37217	0.38	0.48	0	1
Education: uncompleted higher, higher / PhD	37217	0.22	0.41	0	1
Type of employment: businessmen, entrepreneur, top manager	37103	0.06	0.24	0	1
Type of employment: department manager	37103	0.03	0.17	0	1
Type of employment: specialist	37103	0.18	0.38	0	1
Type of employment: white collar worker	37103	0.13	0.34	0	1
Type of employment: blue collar worker	37103	0.19	0.39	0	1
Type of employment: (not working) retired	37103	0.24	0.43	0	1
Type of employment: housewife (do not work and do not plan to look for job)	37103	0.04	0.19	0	1
Type of employment: unemployed or on holidays without pay	37103	0.07	0.25	0	1
Type of employment: student	37103	0.05	0.22	0	1
Type of employment: other	37103	0.01	0.12	0	1
Income category: having not enough money even for food	37256	0.10	0.30	0	1
Income category: having enough money for food, but not enough for clothes, shoes	37256	0.27	0.44	0	1
Income category: having enough money for clothes and shoes, but not enough for home appliances	37256	0.41	0.49	0	1
Income category: having enough money for home appliances, but not enough for a car	37256	0.16	0.36	0	1
Income category: having enough money for a car or an	37256	0.07	0.25	0	1

apartment/house					
Type of settlement: Moscow	37263	0.01	0.12	0	1
Type of settlement: Saint Petersburg	37263	0.01	0.12	0	1
Type of settlement: regional capital with population above 1 mln	37263	0.06	0.24	0	1
Type of settlement: regional capital with population below 1 mln	37263	0.30	0.46	0	1
Type of settlement: provincial town	37263	0.37	0.48	0	1
Type of settlement: village	37263	0.25	0.43	0	1

Table A3. Summary statistics for regional variables

Variable	Obs	Mean	Std. dev.	Min	Max
Generalized trust	68	0.15	0.05	0.07	0.33
Solidarity	68	0.32	0.06	0.22	0.53
Particularized trust	68	0.69	0.07	0.44	0.86
Helpfulness	68	0.28	0.06	0.14	0.41
Ethno-linguistic fractionalization	68	0.28	0.15	0.10	0.73
Log GRP per capita	68	1.38	0.17	1.10	2.15
Log Social spending per capita	68	3.70	0.36	2.82	4.99
Gini	68	0.39	0.03	0.34	0.55
Poverty	68	16.6	4.7	7.4	31.6
Corruption	68	3.16	0.66	1	4
Corruption index (by INDEM)	68	0.45	0.15	0.15	0.81
Willingness to bribe (by INDEM)	68	0.47	0.08	0.27	0.70
Log distance to Moscow	68	2.99	0.70	0	4.07
Temperature in January	68	-13.5	5.7	-28.8	-0.1
Temperature in July	68	18.1	2.3	11.8	25.3
Higher education	68	10.1	3.0	7.2	26.4

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